

CLAIMS

1. A tantalum sputtering target manufactured by subjecting a molten and cast tantalum ingot or billet to plastic working such as forging, annealing and rolling,
5 wherein the structure of the tantalum target comprises a non-recrystallized structure.
2. The tantalum sputtering target according to claim 1, wherein the non-recrystallized structure is 20% or more.
3. The tantalum sputtering target according to claim 1, wherein the non-recrystallized structure is 40% or more.
- 10 4. The tantalum sputtering target according to any one of claims 1 to 3, wherein the tantalum target has a Vickers hardness of 90 or more.
5. The tantalum sputtering target according to any one of claims 1 to 3, wherein the tantalum target has a Vickers hardness of 100 or more.
6. The tantalum sputtering target according to any one of claims 1 to 3, wherein
15 the tantalum target has a Vickers hardness of 125 or more.
7. A manufacturing method of a tantalum sputtering target comprising a non-recrystallized structure by subjecting a molten and cast tantalum ingot or billet to processes such as forging, annealing and rolling, wherein plastic working is ultimately performed thereto.
- 20 8. A manufacturing method of a tantalum sputtering target comprising a non-recrystallized structure by subjecting a molten and cast tantalum ingot or billet to processes such as forging, annealing and rolling, wherein, after the ultimate plastic working process, this is further subject to annealing at a temperature of 1173K or less.
- 25 9. The manufacturing method of a tantalum sputtering target according to claim 7 or claim 8, wherein, after the ultimate plastic working process or after the annealing process, the finish processing is performed to form a target shape.
10. The manufacturing method of a tantalum sputtering target according to any

one of claims 7 to 9, wherein, during the processing stage, forging and recrystallization annealing are repeated two or more times.

11. The manufacturing method of a tantalum sputtering target according to any one of claims 7 to 10, wherein extend forging and upset forging are repeatedly performed.

12. The manufacturing method of a tantalum sputtering target according to any one of claims 7 to 11, wherein, after forging ingot or billet, during the processing stage, recrystallization annealing is performed at a temperature between the recrystallization temperature and 1673K.

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